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JANUARY 1966
VOL. 31 NO. 6

Soil Conservation

DEVOTED TO THE WISE USE OF LAND AND WATER RESOURCES

A Woodland's Worth
Page 123

Land Use Guide
Page 125

Conservation in Unusual Settings
Pages 129, 132, 134, 135

SOIL CONSERVATION SERVICE U. S. DEPARTMENT OF AGRICULTURE

Investment . . .

Nowhere is the economics of conservation more elusive than in figuring the values of farm woodlands.

The long wait to timber harvest holds small attraction to most owners, especially for low-grade sites.

When Economist Carroll Dwyer explained his concept of "the timber savings bank" (p. 123) at the recent Midwest Woodland Workshop, SCS conservationists began to see new hope for managing woodlands as an investment. By comparison, common stocks do not seem such a bargain.

This method of evaluating costs and returns is being developed as a standard procedure for SCS.

Soil Guide: Maine's *Soil Suitability Guide* was such an immediate hit with land owners and planners that the limited printing is already exhausted.

Although there's little chance of getting a copy of the book, you can get an idea of the plan of rating every soil unit for every possible use from Conservationist Donald Dinsmore's article (p. 125).

Such a complete interpretation of soil surveys for all users is a goal to be sought in every State. Although the job must be done locally in each case, Maine's plan of combining the knowledge of all resource experts sets a practical pattern.

COVER: Snow in the Idaho mountains is beauty to those who can see it. It is also the lifeblood of agriculture and industry as the water supply at lower elevations. SCS snow surveys indicate a favorable water situation in the West this year.

Soil Conservation

Devoted to the wise use of land and water resources

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Woodlands Have Many Values

Analyzing costs and returns shows whether woodlot is asset or liability

By Carroll H. Dwyer
Resource Development Division, SCS, Washington, D. C.

FARM WOODLANDS have many profitable uses. An understanding of woodland values will help the rural landowner decide whether it is worthwhile to plant available acres to trees. Farmers with established woodlands may not realize how valuable their forests really are.

The woodland owner must consider the potential of every acre he devotes to trees. Should he convert his woodland to other uses? Is he justified in practicing intensive management of his woodlands?

These questions can be properly answered only after thorough consideration of his woodland's many values. The Soil Conservation Service is currently developing procedures for collecting and analyzing information in a way to give more realistic answers.

The landowner needs information on soils, forest site classes, growth rates, and species adaptation. And he needs to know "will it pay?"

Many profitable uses

Most economic evaluations of farm woodland by traditional methods consider only the income from saw logs, pulpwood, or poles. Some evaluations include other wood products, such as cooperage, charcoal, or veneer bolts. But, if the woodland is to be fairly appraised, all of its products, whether harvested on an annual or a periodic basis, must be considered. A fair market value should be placed on each product whether it is used by the owner or sold.

Christmas trees, ferns, greenery, nuts, cones, shrubs, sap, and other forest products may be—and frequently are—harvested for the landowner's use or for sale. The landowner may obtain fuel, posts, or poles for his own use; he may graze farm livestock on native forage in farm woodlands. Most farm woodlots support some kinds of wildlife which may be harvested by the landowner or by the public through the sale of hunting privileges. Woodlands may also be used for income-producing recreation. These benefits should be figured in the total value of the woodland. The SCS cost-return analyses consider all these values as income.

Most woodlands have values which are not easily translated into monetary terms. Pleasing scenery, fall colors, and abundant bird life have real value to most landowners and to the general public. Woodland may help assure a clear, stabilized streamflow, a slowing down of runoff, and prevention of sedimentation. While the intangible values of woodlands can not be precisely credited to the income side of the ledger, they often weigh heavily in determining whether the farm woodlot is a liability or an asset.

In addition to considering total values as the measure of a woodland's worth, there is need to revise methods of arriving at and expressing these values to give the landowner a clearer understanding of the value of his woodland.

Most evaluations or cost-return projections for woodland today are developed to show the net return, either as a lump sum at harvest time or as the "average annual equivalent net return"—the return that would have been available if the income had occurred at a uniform annual rate. All costs are included and are carried at applicable compound interest rates until the timber crop is harvested.

Any income from sales of pulpwood, poles, or saw logs is credited as income as it occurs. This income

Maple sirup, being made here on a western Maryland farm, adds to the economic return of the woodland.

Fuel wood, at the right, is a secondary product of a woodland being cut for pulpwood.

is carried forward at the same compound interest as costs until the final harvest. Total gross costs are then deducted from total gross income to determine net return. Several variations of this technique are used.

An example, adapted from table 21 of the publication, "Timber Income Potential from Small Forests in the Missouri Ozarks," by John H. Farrell (U. S. Forest Service Research Paper CS-11, Sept. 1964), illustrates the usual procedure.

The woodland is a hardwood stand on site 2 (site index 50), receiving intensive management at medium levels of cost. Stumpage price is $20 per 1,000 board feet. The management practices include clearing and weeding at 20 years of age and thinning at 35 years. Periodic harvest cuts are made at 10-year intervals with the clearcut at 85 years of age.

Annual costs for this woodland are estimated at 13 cents per acre for taxes, 4 cents for fire protection, and 10 cents for management, a total of 27 cents per acre per year. Periodic costs expected are $3 per acre for the clearing and weeding at 20 years, $4.80 for thinning and marking at 35 years, and $1.30 for marking at each of four 10-year intervals.

Expected income from periodic cuts of pulpwood and saw logs at 10-year intervals amounts to $5, $16.50, $28.50, $34, $26, plus a final cut of $152, a total of $262.

All costs and returns are carried at compound interest of 3 percent per year from the time they occur until final harvest. Accumulated gross costs of $107.65 are subtracted from accumulated gross income of $393.20 to obtain the future value of gross income, $285.55 per acre. This amount is discounted to present worth and amortized to obtain an "average annual equivalent value" of net return of $1.48 per acre.

This type of analysis is sound economics as far as it goes, but in many cases it may tell only part of the story. All costs, whether in cash or for labor or equipment, are charged as cash costs and are carried forward at compound interest until final harvest. The accumulated costs are then treated as "sunk," or nonrecoverable, costs as far as the evaluation is concerned. Actually, they are not sunk costs at all, because they are recovered by the owner when he sells his forest products.

Instead of considering the various expenditures as costs, they could be considered as *savings*. They are, in effect, being deposited in a timber savings bank at compound interest at whatever rate is being used. When the timber is harvested, these savings are payable to the owner in a lump sum exactly as is done with a U. S. savings bond.

In the traditional economic analysis, the land normally is valued at its bare cost (without timber cover). At harvest it is credited at the same value as originally. Land prices, however, have been steadily increasing and have in many instances increased several hundred percent during a long (50 to 100-yr.) timber rotation.

If the owner or his family performed some or all of the cultural or harvest operations, they were converting their labor, for which there may not have been a market, into money. This converted time has been carried at compound interest exactly as if it were a money outlay, whereas it may have been largely in labor performed by the landowner's family.

In effect, then, if the accumulated values are greater than the accumulated costs, the owner recaptures his investment; he obtains the compound interest on this investment; and he obtains an additional net return. Of course, if the owner borrows money to pay for any of the expenditures, he will not have the principal, and he must pay interest on the borrowed money.

To illustrate the effect of including secondary products of farm woodlands, let us assume that in the example cited the farm woodland is used for farm firewood, posts, and poles in addition to producing saw logs and pulpwood for sale.

One-half cord of firewood, which consists of dead or other noncom-

mercial timber, is harvested annually. The local price of firewood is $6.50 per cord. Labor costs of harvest amount to $4.50 per cord. Ten posts or poles of noncommercial size are harvested annually and are valued at 10 cents each. Labor costs of harvesting each post or pole are 5 cents. The owner also rents hunting privileges for deer and turkey for 15 cents per acre per year. Annual per acre returns and costs on this woodland then become:

	Gross returns	*Labor and equipment costs*	*Net return*
Firewood ½ cord @ $6.50 cord..	$3.25	$2.25	$1.00
Posts and poles, 10 @ 10¢ each	1.00	.50	.50
Hunting at 15¢ per acre	.15	—	.15
	$4.40	$2.75	$1.65

Since this is an annual operation it is not necessary to carry the costs and returns to future value and discount them as was done with the saw logs and pulp. If there had been periodic costs or returns, it would have been necessary to treat all of them as shown in the example.

The additional net return of $1.65 added to the average annual equivalent net return of $1.47 from the pulpwood and saw logs, as shown in the original example, gives a total equivalent net return of $3.12 per acre annually. This amount is available to pay interest on the land, as a return to management, or as profit.

A wider recognition of the many values of woodlands, and their economic evaluation by the new SCS cost-return procedures, should lead to greater attention to woodland conservation and management on the estimated 293 million acres of private woodlands in the country.

SCS conservationists will be better equipped to advise the some 3 million owners of farm woodlots on desirable land use alternatives, and to encourage the conversion of unneeded cropland to other uses. ♦

Maine's Guide to Land Use

Soil suitability ratings tell owners of sites' potentials and limitations

By Donald T. Dinsmore
Assistant State Conservationist, SCS, Orono, Maine

A "SOIL SUITABILITY GUIDE," bringing together the knowledge of experts in all phases of resource use to interpret soil maps for a wide range of land uses, is gaining widespread popularity in Maine.

Designed for speedy reference to ratings of some 650 soil units, the new tool provides landowners, town planning bodies, and resource conservation agencies advice on 5 major categories of interest: Agriculture, recreation, woodland, wildlife, and urban and industrial use.

The "guide" itself is a 40-page mimeographed booklet issued jointly by the Soil Conservation Service and the Maine Agricultural Experiment Station, Orono. It consists mainly of tables showing the suitability ratings of every kind of soil in the State for the different uses.

Local interpretations

With the statewide guide as a reference, each user can interpret local soil maps for the features in which he is interested. Maps for approximately 25 percent of the State are available in published soil surveys; others can be seen in local Soil Conservation Service offices where surveys are underway.

The brief, simple format invites immediate use of the information. At the same time it spurs curiosity about basic soil and water knowledge.

Rarely is a landowner satisfied

Industrial sites, such as this potato packing plant in the Central Aroostook Soil Conservation District, present problems of suitability of soils for foundations, parking areas, and waste disposal.

to merely look up and note the ratings of his soils in one of the tables. He wants to know the why's and wherefore's — the physical evaluation behind each site's limits and potentials. This he can find in the wealth of data recorded for the 8 million acres of Maine mapped to date.

Soil surveys popular

As a result, published soil surveys available in the 16 soil conservation districts are enjoying widened circulation. Where surveys are incomplete, an increasing number of callers ask for field sheets, soil descriptions, and survey notes—anything that offers information useful in land use planning.

The need for the suitability guide was made evident by the wide interest in converting cropland to recreational enterprises. Additional demand comes from the drive for more efficient farming in the face of intensified competition; a campaign to attract industry to areas of underemployment; and the expansion of housing, school plants, shopping centers, and associated public utilities.

Due to the vast range of possible land and water uses, specialists representing every conceivable interest in resource development

This putting green on a former dairy farm illustrates the new evaluations of soils needed for new land uses.

were called upon for information. Leading the effort were the Soil Conservation Service, the University of Maine's College of Life Sciences and Agriculture, and research workers of the Forest Service.

The originators of the guide are quick to point out that, although the ratings are based on the best available knowledge and the combined judgment of land use and conservation experts, they are not hard-and-fast rules. Further experience certainly will lead to revisions and improvements in the future. But soil conservationists and planning officials are agreed that the ratings provide a useful guide to local land use decisions.

In the words of one member of the group, the assignment was clear: "Furnish guidance that can head off chaotic development. Put it in a format that anyone can use. Help taxpayers save money by steering them around costly mistakes in planning."

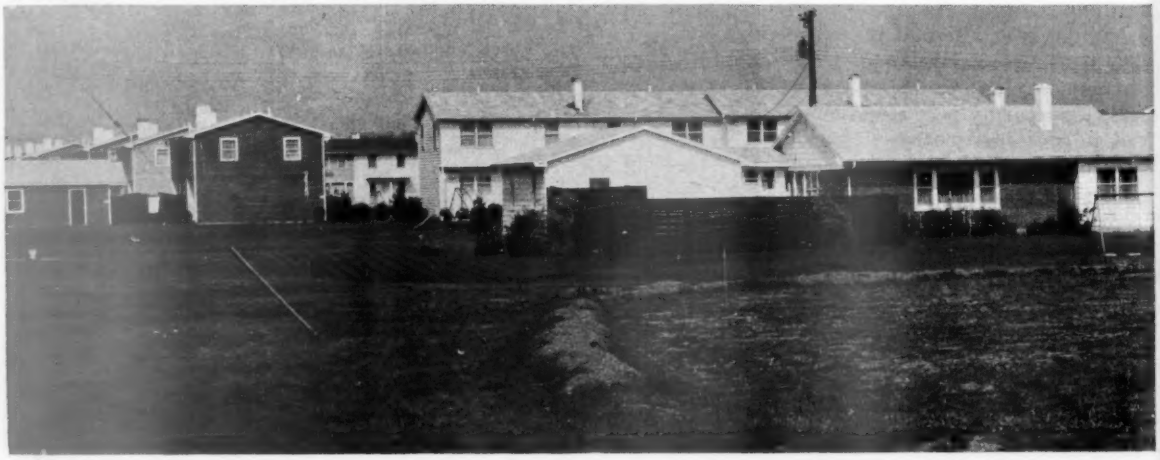
Taking one kind of soil at a time, specialists applied criteria that are significant to each type of land user or developer. Among the factors considered are natural site adaptability; demands of site preparation, costs of operation and maintenance, sanitation, and accessibility.

For every use

Using the correct technical name for each local soil as the basic index, the document presents five groupings of tables wherein ratings are listed under each type of user-interest, in "A" (most suitable), "B," "C," and "D" (least suitable) grades of suitability.

Six specific kinds of land use suitability are thus rated in the section on agriculture. Nine categories of recreation land development, ranging from temporary tent sites to access road construction, are indexed under another appropriate heading.

Residential construction calls for ratings of soils for drainage, percolation for septic tank fields, and other qualities than those needed for agriculture.



The woodland production suitability ratings list 10 tree species having economic interest in the State.

A wildlife habitat section furnishes guidance for three different kinds of development: Woodland, wetland, and open land.

Eight separate kinds of user-interests, varying from septic tank disposal fields to building sites, are rated for urban and industrial development.

Each section is prefaced by an explanation of the factors used by these specialists in determining the ratings.

The introduction points out that the guide "is not intended to replace detailed information on soils as found in the published soil surveys, but rather to supplement and to broaden the use of the more technical material."

Interpretive maps

Transparent overlays showing soil boundaries of specific tracts are provided to development planners in response to request or need. They may be colored according to a key corresponding to the four degrees of suitability for use. In descending order, the colors are green, yellow, red, and blue—the last being ascribed to soils having severe physical limitations and generally considered to be "very poor or unsuited to the use indicated."

Early users of the guide were more than 75 towns that adopted it in their planning procedure within a few months of its release.

Ingenious use of the guide was made at a small watershed project, where a dam providing a large recreation pool was in the planning stage. Camp and cottage development was desired by the sponsors. At a critical moment, investigators decided to check the soil suitability ratings for the entire basin. They revealed that by raising the design elevation of the water level 5 feet, future cottage owners would clearly have a greatly expanded stretch of useful shoreline. The dam was replanned accordingly.

A new summer cottage being built along the stony shore of Peabody Pond in Sebago illustrates the expanding use of wooded areas and lakes for recreation.

One downstate community planner commented, "What I like is the way this thing tells you what you *can* do as well as what you'd better think twice about. These maps, for instance, show alternative places for development. They don't fence you in, by any manner of means."

For an Alpine village

Architects planning a 2,000-acre, year-round Alpine-type village for the west-central highlands also praise the guides. They found them useful in planning for a $30 million complex of chalets, hotels, water impoundments, and other accommodations for a sports-minded community.

Preliminary layouts were on the drawing boards when the developers awakened to the soil suitability guide. SCS furnished supplementary soil maps and site investigations. Problem and optional areas were speedily discovered. Using the maps and guidelines, the architects revised their plans with large savings.

Another illustration involves a

Excerpts from the five soil suitability tables illustrate how each of the 650 different kinds of soils are rated for every potential land use.

Job Corps encampment being installed in the far eastern part of the State. The construction supervisor was about to rough out water and sewage facilities when a soil suitability guide came to hand. The guide was discouraging. Field checks showed bedrock at a depth of 1 foot in the entire area selected. Search for alternative areas located a suitable site a short distance away.

Since the soil suitability guide made its debut, specialists working with it have collected hundreds of similar experiences. They include instances of town, community, and area planning; timberland management; rural and urban resource development; and individual, corporation, State, and Federal planning for an infinite variety of land uses.

The maps interpreted to suitabilities for various uses evidently provide the best visual aid yet found for considering soil and water resource development alternatives and potentials. One agency specialist summed it up: "Maine simply couldn't have waited another 10 or 15 years for this guidance without planning disasters like those we've seen in other Atlantic States. With this approach, we've got a fighting chance for *quality* development—with a capital 'Q'!"♦

AGRICULTURAL SOIL SUITABILITY

Mapping Unit (Alphabetical)	Slope	General Cropland	Forage Crops	Pasture	Irrigation	Orchards	Potatoes	
Acton 1	A	B	A	A	B	D	C	
	B	B	A	A	B	C	C	
	C	B	A	A	C	C	C	
Acton vstl	A,B,C	D	D	D	D	D	D	
Adams fsl	A,B	C	C	C	B	D	D	
	C	C	C	D	C	D	D	
	D	D	D	D	D	D	D	

WOODLAND PRODUCTION SOIL SUITABILITY

Mapping Unit (Alphabetical)	Slope	White Pine	Red Pine	Spruce - Fir	White Cedar	Hemlock	Northern Hardwood	Oak	
Acton 1	A,B,C	A	C	A	A	A	A	B	
Acton vstl	A,B,C	A	C	A	A	A	A	B	
Adams fsl	A,B,C	B	A	D	D	D	C	C	
	D	C	B	D	D	D	C	C	

WILDLIFE HABITAT PRODUCTION SOIL SUITABILITY

Mapping Unit (Alphabetical)	Slope	Openland Wildlife Habitat	Woodland Wildlife Habitat	Wetland Wildlife Habitat			
Acton 1	A	B	A	C			
	B,C	B	A	D			
Acton vstl	A	D	A	C			
	B,C	D	A	D			
Adams fsl	A,B,C	C	C	D			
	D	D	C	D			

RECREATION DEVELOPMENT SOIL SUITABILITY

Mapping Unit (Alphabetical)	Slope	Undeveloped Tent Sites	Developed Tent & Picnic Area	Trailer Park Sites	Camp or Cottage Sites	Playing Field, Shooting Ranges	Golf Courses	Small Pond Building	Winter Sports Area	Roads, Rec. - Farm - Forest	
Acton 1	A,B	B	B	B	B	B	B	B	D	B	
	C	D	C	C	B	D	B	C	A	C	
Acton vstl	A,B	B	C	C	B	C	D	B	D	B	
	C	D	C	C	B	D	D	C	C	C	
Adams fsl	A,B	A	A	B	A	C	C	D	D	B	
	C	D	C	C	A	D	C	D	A	C	
	D	D	D	D	C	D	D	D	B	C	

URBAN, INDUSTRIAL, ETC., SOIL SUITABILITY

Mapping Unit (Alphabetical)	Slope	Septic Sewage Disposal	Lagoon Sewage Disposal	Dumps and Junk Yards	Earth Cov. Fall-Out Shelters	House Bldg. w/ Sep.Sew.Disp.	House Bldg. on Pub. Sew. Disp.	Pipe and Sewer Lines	Heavy Bldg.- Sites		
Acton 1	A	C	B	A	C	C	B	B	A		
	B	C	B	A	B	C	B	B	A		
	C	C	C	B	B	C	B	B	C		
Acton vstl	A	C	B	A	C	C	B	B	A		
	B	C	B	A	B	C	B	B	A		
	C	C	C	B	B	C	B	B	C		
Adams fsl	A,B	A	D	D	A	A	A	C	C		
	C	B	D	D	A	B	A	C	C		
	D	C	D	D	C	C	C	C	D		

Land Judging Contest

The Monroe, Wis., County 4-H Land Judging Contest has been "a major factor in explaining conservation to the future custodians of soil," say soil conservation district officials and SCS personnel. The Moose Lodge of Monroe County helps sponsor this project by giving benefit dances each Saturday night. ♦

Some day, maybe, a real champion . . .

Dog Trainer Uses Conservation To Create Range for His Charges

GIVING TECHNICAL assistance in layout of ponds, ditches, and irrigated pastures to conserve soil and water is nothing new for SCS conservationists. But a 40-acre ranch near Santa Rosa, Calif., provided SCS personnel with one of their more unusual exercises in soil and water conservation planning

Owner Robert E. (Bob) Sevenants combines an operation that includes birds, cattle, and, most important, dogs on a ranch formerly devoted to turkeys and vineyards.

It happened this way:

Sevenants, a native of Wisconsin, put in 23 years as a member of the U. S. Coast Guard. All that while, he thought more and more about the hours spent as a boy in Wisconsin, hunting in the fields with dogs. By the time his last hitch was in, the decision had been made: He would raise and train hunting dogs.

Photos through the courtesy of Joe Price, Jr., of *The Press Democrat*, Santa Rosa, Calif.

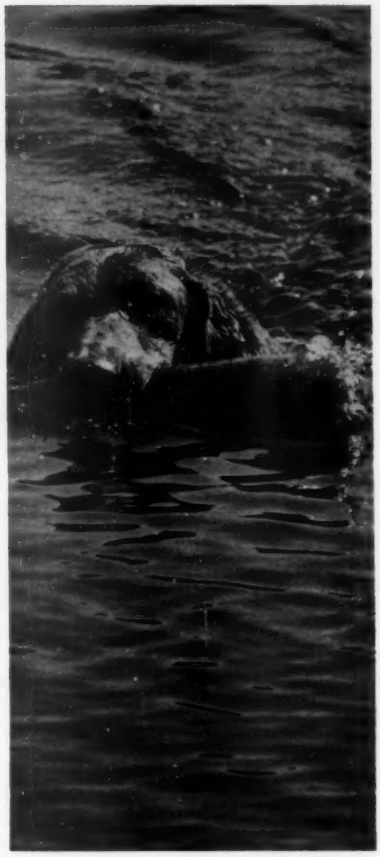
Now his ranch in Sonoma County abounds with ducks, cattle, pheasant, pigeons—and dogs, the primary business on this ranch. There are ponds and an irrigation ditch that spirals down around a hill. And around the hill are pastures being used not only by cattle but by the dogs Sevenants trains.

Sevenants has raised about 350 dogs—mostly Labrador Retrievers, but some Chesapeakes and Weimaraners, too. He owns some, trains others for people who like them for hunting.

"A well-trained hunting dog at work is the most fascinating part of hunting for many people," Sevenants says.

The ex-Coast Guardsman had some specifications in mind for the ideal dog ranch location. It had to be at the end of a road, have plenty of water, and no close-by neighbors.

He found what he was looking for near Sonoma County Airport northwest of Santa Rosa. It was in the Santa Rosa Soil Conserva-



A well-trained dog retrieves the game on land or water.

Robert E. Sevenants shows the "trainees" the bird they are to retrieve. At right, the dog, after retrieving the game waits in the correct manner for the signal to conclude the sequence.

tion District, and Sevenants signed up as a cooperator to receive SCS help in developing a soil and water conservation plan.

Lucky thing, too, for he early discovered unexpected problems as well as the usual ones. Annual vegetation on the ranch included weeds, burs, and "stinkers" that would dry up early in the summer and be injurious to noses, ears, and feet of his dogs.

Practices and systems

Merle Gross, SCS work unit conservationist at Santa Rosa, suggested planting an irrigated pasture of perennial grass and legumes. A properly managed irrigated pasture would not only provide better conditions for training dogs but would also furnish better cover for birds and forage for cattle.

As a matter of fact, the cattle were a necessity because the grass grew tall and plentifully. Dogs had trouble finding downed birds or "dummies."

Sevenants gets cattle at auctions and grazes them over the lush pastures. After a few months, the grass is short enough to work the dogs in and the cattle fat enough to market for a profit. He ran 80 head of them last year.

SCS also assisted in planning the irrigation system which provides water for irrigating pastures and for the lower pond where dogs are trained.

A small round hill with steep slopes presented a problem. To get some use out of this part of the property, Sevenants laid out and constructed a reservoir on top of the hill, scooping out an area 90 by 70 feet by 10 feet deep. Water is pumped up there for storage.

Ditches were constructed on grade from top to bottom, spiraling around and down the hill. A perennial grass planted between the ditches and shrubs along the banks not only stabilize the slopes but provide bird cover.

About a thousand ducks—a cross of Mallard and English-call ducks—inhabit the ranch ponds. They come flying, walking, running, and swimming when Sevenants takes a bucket of grain to the pond and shouts. The ducks, plus pigeons and pheasants, are important to the dog training.

Dog training

Early training during the dog's first year is handled by Mrs. Sevenants, then her husband takes over for the field training.

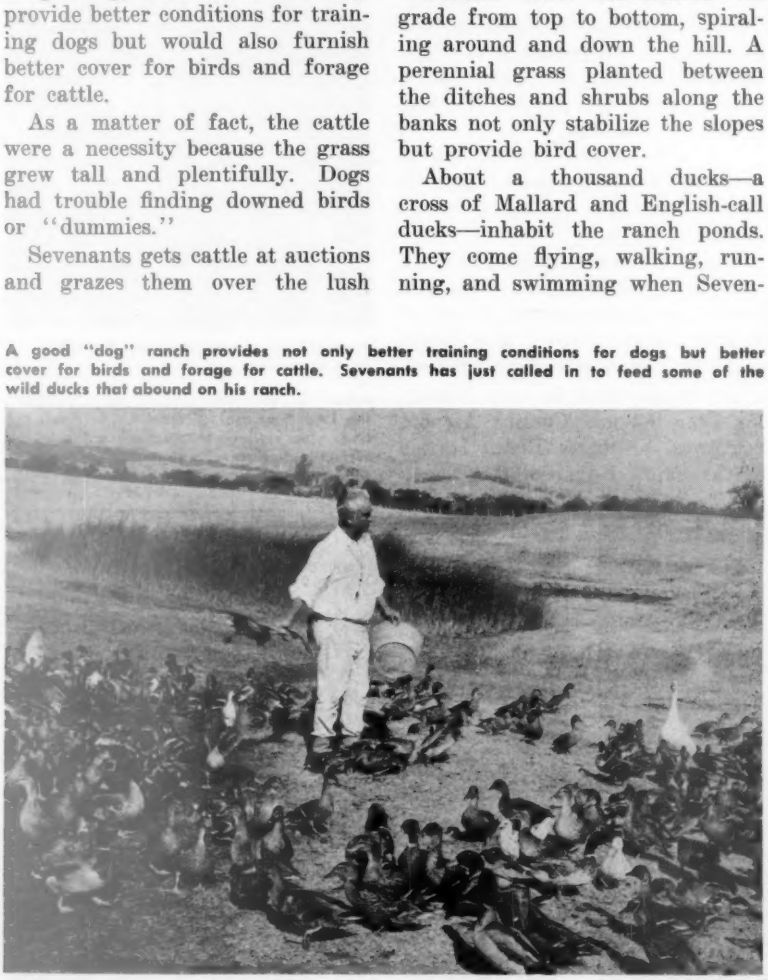
Sevenants takes his dogs to the field—usually several of them—in a trailer. There he lets them out individually and guides them back and forth, through fences and to the pond. Signals are by hand, a whistle, and by voice. For this, either actual downed birds or dummies are used. He also trains the dogs to work in a group so they will understand and follow orders when with other dogs.

Dogs are valuable property. A trained one may sell for several hundred dollars—not too high, Sevenants thinks, considering the work, time, and talent involved in the training.

Sevenants has the dream of every dog trainer or owner—finding that real champion, a dog that will do everything right.

Thinking about it, Sevenants and his colleagues are apt to get a dreamy look and muse: "Some day . . ." ♦

A good "dog" ranch provides not only better training conditions for dogs but better cover for birds and forage for cattle. Sevenants has just called in to feed some of the wild ducks that abound on his ranch.



Conservation Irrigation Keeps Water Clear

A conservation irrigation system on the Roy Watkins farm in the Moses Lake Soil and Water Conservation District, Wash., avoids noticeable erosion on slopes as steep as 8 percent and returns clear water to the wasteway serving two adjoining farms.

Watkins uses a sprinkler system with buried pipelines and removes no crop residues from his fields. His rotation is wheat, sugar beets, and peas.—EARL L. HART, *Work Unit Conservationist, Warden, Wash.* ♦

Pond Provides Water Supply for Three Pastures

ARLIE Broadwater gave a new twist to pond building on his dairy farm near Clarksville, Md., in the Howard Soil Conservation District. He pipes the water in an unusual way to three tanks below the dam. So the cattle have a convenient drinking place in three pastures.

Before letting water into the ⅓-acre pond, Broadwater placed a 50-gallon drum in the middle of the excavation. From the center of the drum he installed a pipe that went through the dam to the three tanks. Water flows by gravity and simple float valves control the level in the tanks. Crushed stone in the drum filters the water.

The pond was the SCS conservationists's answer to the problem of what to do with 4 acres of wet eroded land. A diversion terrace protects it from runoff and sediment from 52 acres of cropland above the dam—ELMER F. SAUER, *Work Unit Conservationist, SCS, Ellicott City, Md.* ♦

One of three stock-watering troughs below the pond.

Horses and Idle Land Become a Business

The Rocking-M Horse Ranch near Augusta, Maine, is a recreational enterprise by a horse-loving family, based on horses, an idle farm, and the use of a soil map.

Dick MacLennan, a former radio station manager, heads up the business which includes selling, brokering, boarding, breeding, training, and renting horses. The three oldest children, Bruce, aged 13; Steve, aged 12; and Carol, aged 10 help with the care and feeding of the horses. They also guide the inexperienced riders on the bridle trails.

The MacLennans, in the Kennebec County Soil and Water Conservation District, live on a 90-acre farm that had been idle for years. Much of the open land had grown up into brush and woodland. They have kept horses for years but recently decided to switch from a hobby to a full time family business.

Dick and the SCS conservationist studied the soil map in laying out bridle trails through his woodland. He wanted to make the trail as scenic and picturesque as possible. He knew some of the soil was wet, also some of the soil was steep, but this was the area he owned and he had to make the most of it. Where the trails cross wet areas, Dick plans to build them up with gravel, on the steep areas he is attempting to lay out the trail so that it will be less likely to erode.

As the business grows he hopes to add more to his woodland recreational area. He plans to establish several small picnic and rest areas. One spot will be for group picnicking, so that the MacLennans can cater to groups.—DAVID C. CHASE, *Work Unit Conservationist, SCS, Augusta, Maine.* ♦

20,000th Farm Has Great Plains Plan

A 1,300-acre livestock-cotton farm in western Texas recently became the 20,000th farm participating in the Great Plains Conservation Program. It is owned by Mrs. Sadie A. Dockrey of Colorado City, in the Mitchell Soil Conservation District, and is operated by her son, Charles.

The 20,000 farms and ranches now in the program total about 40 million acres. Their conservation and land-use adjustment plans, the basis of cost-sharing contracts with the Department of Agriculture, call for conversion of 1½ million acres of cropland to grass.

The 4-year contract for the Dockery farm covers a plan to improve livestock feed supplies. Cotton acreage will be reduced to about one-third the former area, or 40 acres, and the remainder used to produce summer and winter forage. The plan calls for converting 22 acres of cropland to permanent grass and 11 acres to be developed for wildlife. ♦

A few of the more than 1,000 busloads of children that visit Old Sturbridge Village each year get ready to view the New England of an earlier era.

At Old Sturbridge Village . . .

Modern Conservation Helps Bring the Past to Life

By **August I. Reese**
Work Unit Conservationist, SCS, Oxford, Mass.

AT OLD STURBRIDGE Village, a re-created country town of early New England, modern soil and water conservation methods are helping preserve the flavor of the past.

The village, located midway between Worcester and Springfield, Mass., is a regional museum of rural New England life. Its aim is to preserve and present the story of farm and village life of yesterday and to pass on a knowledge and understanding of that heritage to citizens of today.

The story of the village began in the 1920's with two brothers, Albert and Cheney Wells. They collected many items in use during 1790 to 1840 and moved buildings from various parts of New England to the village. Old Sturbridge Village now covers about 285 acres.

The village was first opened to

Water used to turn the wheel of the gristmill (l.) is carried away safely in the drainage ditch. Where two trails in the new nature study area join (r.), rest benches made of native materials are provided.

the public in 1946 and had 5,172 guests that year. During 1964, nearly 375,000 visited the village, including more than 35,000 school children.

It became a cooperator with the Southern Worcester County Conservation District in October 1947. At that time, the village maintained a 25-cow dairy herd, carried on a hay and pasture renovation program, and raised broomcorn, flax, barley, pumpkins, melons, corn, squash and other vegetables.

From 1947 through 1954, the village established several conservation practices. Approximately 750 feet of drainage ditch was installed on bottom land hayfields that were subject to overflow from the Quinebaug River. The ditch also serves as an outlet for water used to turn the water wheel of the grist mill.

Other practices applied to the land included 5,000 feet of wildlife border plantings, 1,500 feet of multiflora rose, 1,500 tree seedlings for windbreaks and esthetic screening, and 5 acres of wildlife wetland development. The improved vegetation was an attraction to the many varieties of fish, waterfowl, birds, and ground game that now inhabit the waters and fields of the village.

The Soil Conservation Service gave technical help in planning the water control and vegetation practices to fit into the unique setting of the 19th century farm.

The conservation plan was revised in June 1963 when the dairy operation was eliminated and a change in program emphasis was made. The Freeman farm area at the village, however, still re-creates life on a small New England farm of the early 1800's. Oxen work the land where the agricultural crops are under cultivation.

More land was acquired, much of it to remain in native cover. The Woodland Walk, consisting of 1 mile of nature identification trails, was developed. It was opened to the public in the spring of 1965. Future plans call for construction of a nature pond, which will regulate the flow of water down a natural drainageway and maintain the aquatic vegetation growing there.

Wooded areas at the village are predominately hardwoods, with white pine gradually taking over some areas. Woodland and wildlife management is planned for these areas.

At Sturbridge, an age of the past is cooperating with an age of the present to create pleasure and entertainment for an age of the future. Natural resource development is helping assure success. ♦

At Freeman farm, a yoke of oxen tills the land for crops of broomcorn, flax, pumpkins, squash, and other vegetables.

Sheep and visitors enjoy each other's company at Freeman farm. Blacksmith shop is in right background.

Vacation Farm in Tennessee Hills

"WHAT we have in mind is a place where a family can have some fun and go home with a little money left," George Brown says of his budding 400-acre recreational enterprise in the wooded hills of Houston County, Tenn.

Although Brown's plan is far from complete, visitors are already coming to enjoy the wooded trails, fresh air, and unmatched hospitality. Without many of the facilities of modern vacation farms, one might wonder what advantages the Brown enterprise offers, but it becomes apparent while talking to the proprietor and his attractive wife, Katherine.

"Well, we are new at this," they explained, "so we just ask our guests what they want to do, then do it. Last summer we took the families for trail rides and hikes, fishing trips, and barbecues—all of which may be done without expensive improvements."

When the Browns bought the property 8 years ago, they realized that it had very little potential for farm income. It was almost all in wooded ridges, divided by steep valleys with names like Sweetgum Hollow, Water Hollow, and Dancer Branch.

Mr. and Mrs. George Brown discuss their recreation project with the author (r.) at the site of a trout pond under construction.

Dammit, the pet vulture, enjoys being hand-fed by his master.

"While we saw right away that it wasn't a farm enterprise, we thought it had terrific potential for recreation." A New Yorker, Brown believes the Tennessee hills have "more potential than the Adirondacks."

Horseback riding was one of the first activities offered. The Browns have a remuda of six saddle horses and the tract is crisscrossed by fire lanes on which the rider can spend hours without retracing his steps. The fire lanes make riding and walking among the oaks, dogwoods, sourwood, and maples a pleasant—and not too rough—experience.

"Bunking in the farmhouse with us is O.K. for a few visitors," Brown said, "but we realized that if we were serious about this recreation business we needed to make some improvements. We were interested in building cabins and a trout lake. We had a conservation agreement with the Houston County Soil Conservation District and they gave us help with our recreation planning."

Work began last fall to divert a small stream to make a fish pond. Four 200-foot raceways were built to raise rainbow trout. A scenically wooded slope above the lake will be the site for guest cabins.

The Farmers Home Administration approved a loan to make the farm improvements, including the recreation features.

Conservation practices are being worked in as the place develops. Old idle fields are being reforested with loblolly pine. Eighteen acres

of permanent pasture and 16 acres of hayland are being renovated.

One of the features of the Brown farm that sets it apart in the visitors' memory is the pet buzzards. An accomplished practical ornithologist, Brown was tapped by the Vanderbilt University Engineering Department a few years ago to assist with research on aerodynamics involving study of the flight of the turkey vulture and black vulture. The birds were trained to react on command and were photographed and otherwise studied at close range from an airplane.

"The birds soon learned to anticipate commands," Brown said, "and this canceled their usefulness in the project. We gave them their freedom, but they continued to hang around the farm looking for handouts. It gives the place an eerie look."

Only a few of the birds are kept in the cages now. A favorite is a black vulture named Dammit. Brown raised Dammit from a fledgling. Dammit is well known in university circles for his contribution to science and has been "interviewed" on television.

The Brown enterprise is an example of how limited resources can be utilized to meet today's demands on the land.—JAMES L. BILYEU, *Work Unit Conservationist, SCS, Erin, Tenn.* ♦

Cheshire Game Club Gets New Life From Tract of Land to Work on

By Walter E. Nelson
Work Unit Conservationist, SCS, Keene, N. H.

WITH THE PURCHASE of a 140-acre plot of cutover woodland, the Cheshire County, N. H., Fish and Game Club launched a project that has attracted national attention.

In addition to converting a rundown piece of property to nature trails, picnic areas, and trap and skeet fields, the club has generated among its members an appreciation for resource conservation.

Where once the 300 members viewed the outdoors simply as a place to take fish and game, they now are concerned with the protection, improvement, and use of it.

It all started in 1960 when the club acquired property just north of Keene City. It was a heavily logged area, its most promising features being remnants of an old stone dam and a debris-strewn stream much abused by litterbugs.

In spite of its deteriorated condition, some wildlife remained, and there were den trees, bramble edges, yew thickets, and alder runs, all enhanced by a certain amount of isolation.

With this raw area as a start, the club became a cooperator with the Cheshire County Soil Conservation District. The Soil Conservation Service mapped the soils. Biologists from SCS and the New Hampshire Fish and Game Department studied the area, and SCS engineers took a look at the old dam.

All the data collected were put together, and the planners and board of directors went to work developing a conservation plan. One provision in it divided the area into two sections—one for wildlife and one for development as an activity area for people.

Community activity

The new concept of the Cheshire Fish and Game Club is reflected in the annual program. There are bus rides for school children to nature centers and fish hatcheries. Youngsters are sent to conservation camps.

The club joins the Cheshire County Soil Conservation District in sponsoring displays that highlight concern over pesticide and

A long-time member of the Cheshire County Fish and Game Club, John Stugis (l.), helps SCS staffer Ken French girdle a marked tree in carrying out wildlife improvement work. French also is a member of the club.

pollution problems. It cooperates in recreation workshops aimed at outdoor enjoyment and safety. It fights for legislation protecting the outdoors from exploitation and waste. Now it plans to sponsor an Explorer Scout troop in the area.

Most of the projects are under way. Parking areas and access roads are developed. The dam is built. The rifle range and trap fields have been in use for 3 years, and several acres of wildlife improvement work has been completed.

In the wildlife section a wide area has been limited to yew and native wildlife shrubs. Woodcock cover is improved, and trails are completed for bird watchers and others who just like to roam the woods. The areas are open to everyone.

For 40 years it was an average small community organization, holding social affairs and civic projects. But when they bought some land the Cheshire Club members began to win area-wide recognition with their conservation program.

The Governor's Conservation Award, sponsored by the Sears-Roebuck Foundation, was presented by Governor John King, and the club received the President's Award of the National Wildlife Federation.

Thus, interest in soil and water conservation and a tract of land on which to carry out a program moved an average club group from obscurity into State and national prominence. ♦

Farmer Restores Depleted Estate

(Photo on p. 144)

WHEN JAMES WATKINS took over operation of a 277-acre sloping farm near Danville, Ky., a few years ago he was determined to make a success of developing and improving it. And his work was cut out for him.

Today he is justly proud of the outstanding example the farm now represents in the community.

What Watkins acquired was the depleted remains of a 100-year old farm, once the pride of the landowner. Years of intensive up and down hill cultivation and heavy livestock grazing—followed up by lack of care—left the old estate in barren desolation. The earth was eroded, topsoil nearly gone, and where there was growth it amounted only to brush, grass, and briars.

As a first step Watkins became a cooperator with the Boyle County Soil Conservation District, and working with the landowner, Mrs. Mary Swope, and SCS conservationists, he decided on a plan of action.

Following the new conservation plan for the farm he removed old fences which were not conducive to good land use. A contour strip-cropping system for growing 4 acres of tobacco, 26 acres of corn, and 60 acres of hay was installed on the long slopes. Eroding gullies were smoothed and protected with Kentucky 31 fescue grass cover.

Much of the land used for grain production was shifted to permanent vegetative cover. All the hayland and pastureland, badly eroded because of poor soil cover and overgrazing, has been renovated and is properly grazed to insure good soil cover and protection throughout the year. The hay crop consists of fescue, red clover, and Kobe lespedeza.

Watkins has a herd of 51 Hereford cows which grazes on pasture of annual lespedeza, white clover, fescue, and bluegrass. The cows produce feeder calves for local market.

In addition to his main enterprises, Watkins produces and sells tomatoes, beans, and strawberries. He said the time spent in growing cash crops is provided by practicing conservation farming.

Watkins is now a Boyle County District supervisor. For next year he plans to improve the water system on the farm by developing a spring, walled in a century ago by Confederate soldiers. He also will construct two lakes for livestock water, fish, family recreation, and irrigation.—EDWIN E. KING, *Work Unit Conservationist, SCS, Harrodsburg, Ky.* ♦

Public Recreation Areas Cost-Shared

Specific recreation area acquisition and development projects to be financed by the Land and Water Conservation Fund may now be submitted from 12 States whose comprehensive recreation plans have been approved. The Bureau of Recreation has allocated a total of $28,294,531 to the following States: California, Connecticut, Indiana, Louisiana, Missouri, Nebraska, New Hampshire, New York, Ohio, Oregon, Pennsylvania, and Rhode Island.

Since soil and water conservation districts are bodies qualified to sponsor or otherwise participate in local projects, they may be provided for in the State plans. ♦

Water Supply Outlook Is Good for West

The 1966 outlook is good for water supply for irrigation, municipal power, and industrial use in the 11 Western States.

The USDA water supply forecasting summary, based mainly on snow surveys by the Soil Conservation Service and cooperating agencies, indicates that the 1965 water year in the west was the most favorable of the past 10 to 15 years and many reservoirs are carrying over record storage into 1966.

Practically all reservoirs have more water than at the beginning of the 1965 irrigation soils. Mountain soils are wet, and snowfall is substantial in the Rockies. ♦

Soil Conservation Key to Success for Wisconsin Farmers

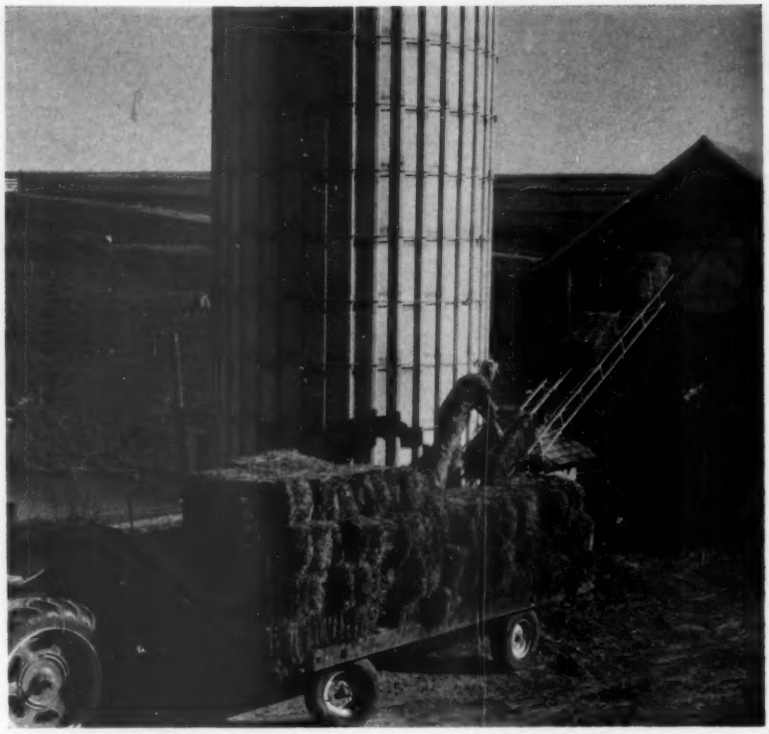
FARMERS Frank and Pat Snell, and Vernon Roth of Crawford County, Wis., agree that soil and water conservation is a year around job.

They have gradually improved their farms through well planned and developed conservation programs.

Terraces were added on the Snell farm in 1949 and 1951. Two grade stabilization structures were built in 1960. Contour strips were remarked on several fields, following the contour more closely and made narrower in width.

The Snells improved their beef feeding setup. They now feed low moisture grass silage (haylage) from two large silos. Summer grazing on their pasture areas is carefully managed and controlled.

Roth added several diversions and a grade stabilization structure. He also is bringing the old contour strips up to modern standards. He is planning a new barn for his dairy herd. Much of the material for it is coming from his managed woodlot.

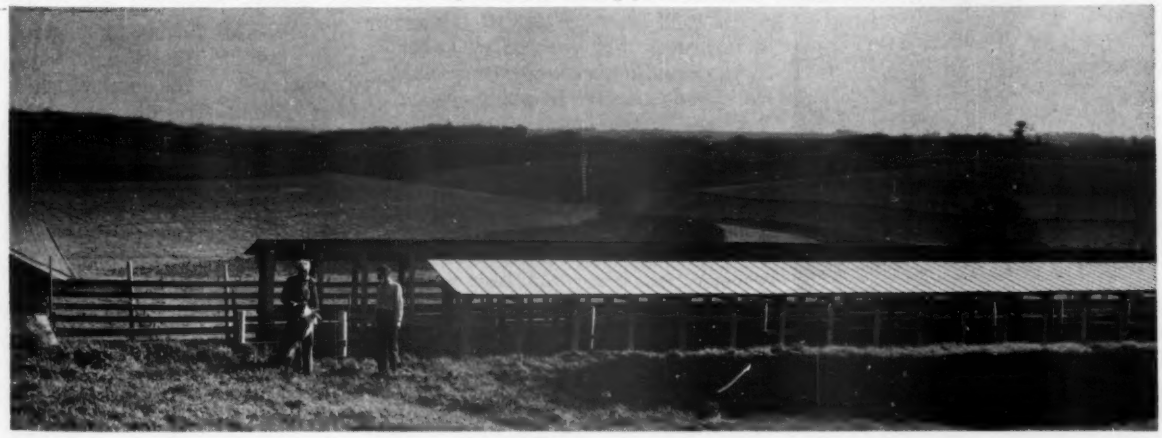


Vernon Roth puts third crop alfalfa in a barn on his farm. A small pond is at lower left.

Roth has followed conservation practices based on the capability of the soil. He has converted many acres of land from corn to hay and grass. The amount of high quality alfalfa being harvested now is much greater than the 12 loads of clover hay harvested in 1939.

Both Roth and the Snell brothers signed agreements with the Crawford County Soil Conservation District in 1939, the first year it was in operation. Since then, at the forefront of many advances in farm technology has been the adoption of sound soil and water conservation programs—the foundation of the successful Snell and Roth enterprises.—A. J. AMUNDSON, JR., *Work Unit Conservationist, SCS, Gays Mills, Wis.* ♦

Pat and Frank Snell find a moment to relax at the improved beef feeding yard and bunks on their Wisconsin farm.



Conservation Farming Provides Good Living

Joseph B. Tolbert, and his two sons, John Robert and Joseph Dennis, show part of the beef cattle herd on their diversified farm.

IN THE OLD Bell Place Community for Greenwood County, S. C., Joseph B. Tolbert does not believe in "putting all his eggs in one basket."

He believes a diversified program fitted to a soil and water conservation plan on his 200-acre debt-free farm will do three things: Provide a comfortable living for his family, furnish valuable experience in conservation farming for his two adopted sons, John Robert and Joseph Dennis; and convert more land for pastures.

Joseph B. Tolbert (r.) with FHA Supervisor Dan Gambrell discusses his diversified farming program.

When Tolbert became a cooperator with the Greenwood Soil and Water Conservation District in 1943, he was mainly a row crop farmer. He terraced his land and practiced crop rotations.

In 1958 after he started raising a few cattle and hogs, he asked for help to revise his conservation plan to include a better cropping system adapted to the land's capability and to grow more feed for livestock. The new plan called for more sod and close-growing crops, including legumes for better erosion control, improving the terrace system, and establishing meadow outlets. His livestock program has grown to a 20 brood-cow herd of beef cattle and 8 brood-sows.

Grain and hay in excess of livestock needs are sold for cash income in addition to his other crops. Seventy-three acres of grassland furnishes grazing for the cattle.

Tolbert, his wife Mamie, and the two boys, ages 11 and 12, run the farm with little outside labor. Mrs. Tolbert does such jobs as driving the tractor during haying season.

The family is active in community affairs and makes good use of Agricultural Stabilization and Conservation Service and Extension Service programs.

A successful farmer and a good citizen, Joseph Tolbert was recently appointed to the local Farmers Home Administration Committee for a two-county area.—T. D. ALLDREDGE, *Work Unit Conservationist, SCS, Greenwood, S. C.*♦

City Water Supply

The public water supplies of the 100 largest cities in the United States serves 9,650 million gallons of water a day to 60 million people. ♦

The Gold Seal Award to Scouts For Conservation Activity

By Joseph M. Robertson
Assistant Secretary of Agriculture

I AM HONORED to be here today—to represent Secretary of Agriculture Orville L. Freeman—and to salute one of your councils: The Narragansett Council of the Boy Scouts of America.

Twice in the past 5 years the Narragansett Council has won the Department of Agriculture's Green Seal award for regional excellence in conservation work. Now, it receives the Department's highest recognition — the national Gold Seal award for the most outstanding conservation work by a Scout Council anywhere in the Nation during the past year.

Congratulations! You have compiled a record unequaled in the brief history of this award.

While we honor the Narragansett Council in particular, I understand there has been increased conservation activity in all of the scout councils. This is reflected in the number of soil and water conservation merit badges awarded in this region.

This increased conservation activity bodes well for the future, because each of you is a member of a team—a team of private citizens and public servants who are working together to improve and restore the great American out-of-doors.

When this was the land of the Narragansett, the Mohawk, the Iroquois, and the Seneca, there was untouched beauty to be found at every turn—in the rugged sweep of the seacoast, in the majestic mountains, in sparkling, clear streams, and in the breath-taking natural beauty of your forest lands.

Much of that beauty has been spoiled or squandered because at the time it seemed so inexhaustible.

We know *now* that belief was false.

Now we must work overtime to erase blight and retain the beauty of our outdoor heritage or it will slip from us forever.

We find ourselves in the position of the Red Queen in "Alice Through the Looking Glass" when she said: "Here it takes all the running you can do to keep in the same place. If you want to get somewhere else, you must run at least twice as fast as that."

But we must do more than run faster. We must enlist others in the conservation cause.

We must make them understand that conservation is an active, dynamic, constantly changing thing, but that it always has only one goal—to make our mountains, our seashore, our soil, our water *serve* people.

The purpose is *use.*

Use that restores the spirit, like watching a chill morning mist swirl across a lonely campground as you sip a warming mug of hot chocolate.

Use that brings pleasure, like the thrill of seeing a doe and her fawns dart across a forest trail.

Use that provides jobs, like a mountainside girded with ski lifts that provide new sources of income and new economic opportunities for the resort owner, the motel operator, their employees, and the people of the area.

Use for profit, like the conservation cropping system that helps American farmers produce better food at less cost to the consumer than farmers in any other Nation in the world.

Use that serves a community, as a watershed project can provide the water to service a municipal water sytem.

We *need* to create a better understanding of our aims and goals.

In the words of President Johnson, a new conservation is required to deal with these new problems. A conservation that involves not only protection and development, but restoration and innovation. A conservation that is concerned not with nature alone, but with the total relation between man and the world around him.

You can contribute mightily to this total relationship by promoting conservation in the schools . . . by informing friends and neighbors and adult civic organizations of the ways that conservation contributes to their enjoyment of the out-of-doors . . . and to the national well being.

Since the Boy Scout movement does much to instill in our Nation's youth a deep and lasting appreciation of nature, you are a natural and important partner in the conservation movement.

The Department of Agriculture would like to see this partnership strengthened. That is why we created a series of awards to recognize the work you do to fight erosion, to reforest blighted regions, to prevent forest fires, to improve wildlife areas, to develop recreation sites, and to promote conservation and wise use of our natural resources through your educational programs. The first regional Green Seal awards for conservation excellence were made in 1961. Then, in 1962, we created the national Gold Seal award to afford greater recognition to your efforts.

Now, it is my great pleasure to present to your representative, the national Gold Seal award for 1965. ♦

This statement was made in awarding USDA's Conservation Gold Seal to the Narragansett Council of the Boy Scouts of America at Portsmouth, N. H., Oct. 16, 1965 (*Soil Conservation,* September 1965).

CONSERVATION PROFILE

Dr. Daniel Hale

West Virginia

Conservation and health are doctor's concern

A DOCTOR who sees the connection between soil and water conservation and the healing of the ill has been honored by the citizens of Mercer County, W. Va., by giving his name to the largest dam in their small watershed project.

He is Dr. Daniel Hale, who has been the driving force behind the creation of one of the Nation's outstanding watershed projects on Brush Creek in the Southern Soil Conservation District.

Until 1947 Dr. Daniel Hale was a quiet, unassuming general practitioner in his hometown of Princeton, interested on his off hours in gardening and his hobby of hybridizing daylilies.

With a few Christmas trees planted on a 15-acre tract according to the recommendations of the Soil Conservation Service, the doctor had his first taste of success in conservation. Encouraged by the experience, he was soon the owner of more than 170 acres covered with trees.

As a cooperator with the Southern District, the doctor built four farm ponds, constructed diversion terraces and access roads, and seeded the critical areas of his farms.

Concern for health

At the same time he became interested in the relation between soil and water conservation and the environmental health of the community. He recognized in Public Law 566 a means of improving public health by controlling the floods that struck the community annually and created a health hazard.

After preliminary discussions with local citizens, Dr. Hale and a few associates worked day and night to obtain the easements needed on 200 pieces of property for the construction of 3 flood-retarding structures and 6,610 feet of channel improvement in the Dave's Fork - Christian's Fork Channel watershed.

Dr. Hale (c.) as head of two watershed associations joins SCS engineers, Clement Crowe (l.) and Arthur Holland (r.), in the field as they gather information for plans.

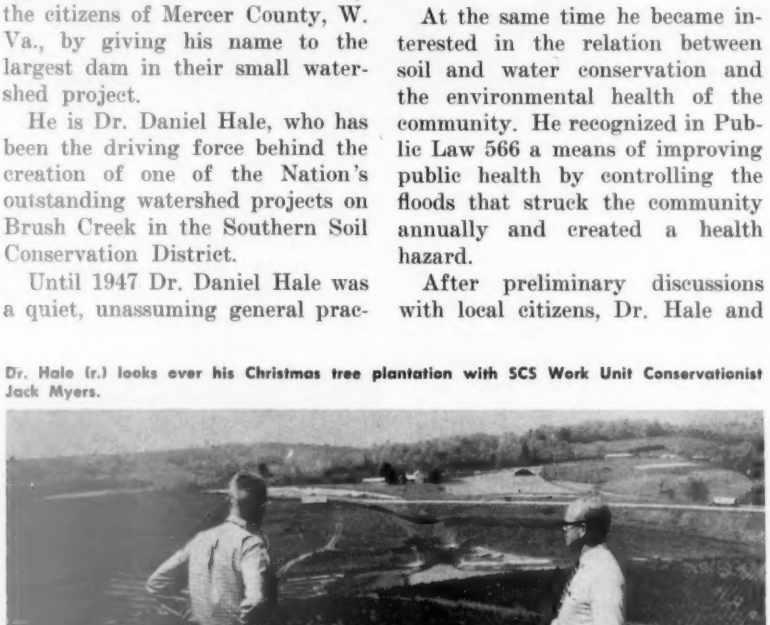
In spite of many frustrations, disappointments, and the irritation of a few condemnation suits, the project was successfully completed and gained statewide attention.

Dr. Hale, who now had some converted "believers" on his side, started on a much larger project. The Brush Creek watershed covering some 22,293 acres and containing 11 structures and 6 miles of channel improvement, was approved in 1960.

Safe water supply

Again the doctor and his followers plunged into the battle of acquiring land easements. One of the main objectives of Dr. Hale's plan was to obtain a safe, adequate supply of water for Princeton. At that time the city depended on wells and had suffered several water shortages. He also envisioned one of the reservoirs serv-

Dr. Hale (r.) looks over his Christmas tree plantation with SCS Work Unit Conservationist Jack Myers.



ing the growing area of Green Valley-Glenwood Park in the center of the watershed. In addition he noted that recreational facilities were needed in the county.

With these three things in mind he approached the Princeton officials and persuaded them to enlarge one of the proposed flood control dams to provide water-supply storage. The Farmers Home Administration provided a $1 million loan to make this possible.

He encouraged and supported the formation of the Green Valley-Glenwood Public Service District to combine a new water supply and central sewage disposal system with plans for another of the floodwater retarding dams. Now almost 1,000 residents are being served by the facilities financed in part by Federal grants and FHA loans.

Dr Hale then encouraged the Mercer County Court to develop another one of the dams into a 55-acre lake to be used for recreational purposes. He used his influence to get approval by the county voters of a $157,000 bond issue for this purpose.

Still more to do

Dr. Hale does not feel that his job has ended with the completion of the Brush Creek project.

He has persuaded the county court to set up a county water conservation committee to plan orderly construction of additional dams for flood prevention, water supply, and recreation to benefit all the people of the county. The court made him chairman of the committee.

In addition to his watershed activities, Dr. Hale is a member of the West Virginia Christmas Tree Growers Association; president of the Mercer County Board of Health; supervisor of the Southern Soil Conservation District; chairman of the Princeton Water Resources Committee; member of the Northeastern Forest Experiment Station Research Advisory Committee; and is still gardening. ♦

Misplaced Mrs.

Mrs. Sue Dunn, mistakenly identified as an "Arkansas miss" when her picture appeared on the cover of the October *Soil Conservation,* is in fact clerk for the Dorcheat Soil and Water Conservation District, Minden, La.

She was helping publicize the outstanding woodland conservation program of the district, also described in the October issue, when the photograph was made. Through a clerical slip, the print was identified as coming from the Lafayette County District in Arkansas.

On her own time, Mrs. Dunn is an enthusiastic conservation worker. She is a popular speaker before women's and civic clubs. Her father, James R. Stewart (deceased), was a member of the original board of supervisors of the Dorcheat district when it was organized in 1938.

Both districts can be justly proud of their stately pines and beautiful girls, but we are glad to have our cover girl correctly located in the district she serves so graciously.—Ed. ♦

Soil Conservation in Perspective. By R. Burnell Held and Marion Clawson. *1965. Johns Hopkins Press, Baltimore (for Resources for the Future.). 344 pp., charts and maps. $7.50.*

One in a continuing series of inquiries by Resources for the Future into America's resource problems, this book is an appraisal of the soil conservation movement since the early 1930's.

The analysis is presented against the background of a brief history of the larger conservation movement that began around the turn of the century and concludes with an inquiry into the proper nature of soil conservation in a changing future.

The key to the meaning of the book is in its title: "Soil Conservation *in Perspective.*"

The reader must ask first, "*whose* perspective,"? for it is a well-known natural law that the perspective of any scene is determined by the position from which it is viewed.

The perspective delineated here is that of the economists of Resources for the Future. Proceeding from the definition of "conservation" that includes only those measures that "maintain basic productive capacity of soils" without "building new or additional capacity," the authors label much of the going soil conservation programs of the Department of Agriculture as contrary to the public interest. In so doing, they imply that the emphasis of the original Soil Erosion Service should have prevailed for all time!

The attempt to assess the effect of soil conservation activities on agricultural production proves frustrating as the authors seek to categorize each practice as "maintaining" or "increasing" produc-

tion, only to find that most of them may have both effects simultaneously. They fail, however, to consider the compensating effects of practices *used in combination*, as they invariably are in modern conservation programs.

The authors' concern with individual practices, rather than the total conservation treatment of land areas, reveals how out-of-touch they are with today's on-going conservation operations. It ignores the growing attention to the connection between *soil* and *water* management and to the orderly land use adjustments that have been a predominant part of soil conservation district and SCS programs for many years.

An evaluation based on such a picture of soil and water conservation operations cannot give any real appraisal of their net effect on current agricultural production. Nevertheless, the authors hold to the viewpoint that programs to improve the efficiency and preserve the productivity of the Nation's land resources are in conflict with the effort to support farm income by restricting production.

This viewpoint might suggest that the way to solve the "surplus" problem is to induce inefficiencies by withholding improved technologies and withdrawing technical assistance, including research. Would it then follow that the public would be better served by greater losses from erosion, drought, floods, and poor drainage, and by reduced production as a result of continued cropping of unsuited land rather than putting it into trees, grass, or adapted nonfarm uses?

Obviously, this would not be in the public interest. At many points in the book the authors recognize that it would not, and when they come in the final chapters to define an "ideal" conservation program for the future they conclude largely with a series of unanswered questions.

The book does bring together an impressive collection of facts about the Nation's conservation effort and presents them in a provocative manner. Whatever the reader's point of perspective, he surely will agree with the general thesis that there are many changes in store, and soil conservation must adapt to "the changing future."—GLADWIN E. YOUNG, *Associate Administrator.*

Regions, Resources, and Economic Growth. By HARVEY S. PERLOFF, EDGAR S. DUNN, JR., ERIC E. LAMPARD, AND RICHARD F. MUTH. *1960. (Reprinted 1965.) University of Nebraska Press, Lincoln. 716 pp., maps, charts, paper. $1.95.*

This reprint of a Resources for the Future study first published by Johns Hopkins Press makes easily available a vast amount of information about our country's resources and its economic growth and development analyzed by regions and by industries

Population trends, employment, income, and the use of resources are the factors used to show economic growth. The industries are grouped as agriculture, manufacturing, mining, forestry, fisheries, and services. These six broad categories are considered in relation to each other to show how our resources have been used, what changes are occurring, and where further adjustments may be expected. Economists and resource conservationists will find valuable information and insights on the relationships of natural resources to economic growth.—T. A. NEUBAUER, *Resource Development Division, SCS, Washington, D. C.*

New Publications

Autumn Olive for Wildlife and Other Conservation Uses. By PHILIP F. ALLAN AND WILMER W. STEINER. 1965 (rev.). USDA Leaflet 458. 8 pp., illus. This leaflet, considerably revised, describes, the uses, planting and care, planting stock sources and production, and seed production of autumn olive. It also gives the history of autumn olive, what it is, and where and how it grows, along with a map showing zones of adaptability. Included is the first published description of Cardinal autumn-olive, a new variety developed by the Soil Conservation Service. It is characterized by rapid establishment, winter hardiness, and the production of an abundance of colorful fruit.

A Chronology of American Agriculture, 1790-1965. PREPARED BY AGRICULTURAL ECONOMIC RESEARCH SERVICE. *1965. USDA. Wall Chart 48x30 in., folded 8x10 in.* A listing of major economic, political, social, and legislative events and trends arranged for easy reference on a time scale.

Improving Cattle Distribution on Western Mountain Rangelands. By JON M. SKOVLIN. *1965. USDA Farmers' Bul. 2212. 16 pp., illus.* Suggestions on ways to avoid range depletion by improving distribution of grazing on land of uneven character.

Public Land Statistics 1964. *1965. U. S. Dept. Int. Bur. Land Management. 203 pp., illus.* Tabulation of the land area and its use, management, and protection.

Soil Surveys

Merrimack County, New Hampshire. By HARVEL E. WINKLEY. *1965. 94 pp., illus; maps 3.17 inches to the mile (1:20,000).* Soils surveyed by Harvel E. Winkley, Dirk Van Der Voet, Frank J. Vieira, Edward F. Hutchinson, Theodore L. Kelsey, Anthony D. Hamilton, Sidney A. L. Pilgrim, and Bradford Higgins.

Amador Area, California. By HAROLD R. SKETCHLEY. *1965. 167 pp., illus; maps 3.17 inches to the mile (1:20,000).* Fieldwork by Grant M. Kennedy, Harold R. Sketchley, Lawrence E. Welch, John H. Rogers, Paul G. Nazar, and David C. Estrada.

Calhoun County, Mississippi. By J. W. MCMULLEN, J. S. HUDDLESTON, CHARLES BOWEN, AND R. E. DAVIS. *1965. 65 pp., illus.; maps 4 inches to the mile (1:15,840).*

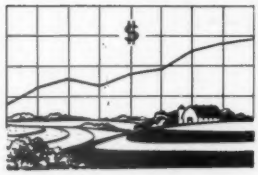
Hockley County, Texas. By DARRELL G. GRICE, WILTON GREEN, AND WAYNE RICHARDSON. *1965. 65 pp., illus; maps 3.17 inches to the mile (1:20,000).*

Nueces County, Tex. By GUIDO E. FRANKI, RAMON N. GARCIA, BENJAMIN F. HAJEK, DANIEL ARRIAGA, AND JOHN C. ROBERTS. *1965. 65 pp., illus.; maps 3.17 to the mile (1:20,000).*

Thomas County, Nebraska. By LESTER E. SHERFEY, CHARLES FOX, AND JOHN NISHIMURA. *1965. 44 pp., illus; maps 3.17 inches to the mile (1:20,000).*

From the Administrator:

Economics and Conservation



HELPING PEOPLE through locally organized efforts and leadership to make judicious use of the soil, water, and related resources at their disposal is the business of the Soil Conservation Service.

It is important and challenging work. It requires the development of resource conservation plans—both broad and specific in scope, long-range and short-term in time scale.

Both physical and economic yardsticks must be correctly applied in estimating the probable effects of alternative land and water uses being considered and in evaluating the results of the decisions carried out.

Many things motivate people to use and treat their natural resources the way they do. Each family and each community must determine its own objectives.

One of the most powerful motives in farming, ranching, or other uses of land and water today is to achieve a satisfying standard of living of the individual. Likewise, communities seek improved economic activity in order to sustain and support community services, facilities, and institutions at a desired level.

Although economic considerations do not dominate every decision on resource development and use, they do play an important part. In fact, economics is so important in the work of the Soil Conservation Service that it is "a thread that runs through the whole garment." That is to say, every SCS conservationist, whatever his specialty, must be knowledgeable and skillful in the use of economic facts and principles.

No professional conservationist measures up to the requirements of his job until he can help people make practical application of economic information necessary for sound long-term decisions and actions to achieve conservation objectives. The fact is, the SCS conservationist is not in a position to point out practical alternatives until he understands both the physical and economic consequences likely to result from the adoption of those alternatives.

Anyone who influences people, individually or collectively, in the use and treatment of soil and water resources influences the costs and returns that result from the actions taken. It is important that Service employees encourages and help the decision-makers weigh carefully during the planning process the probable economic effects of each promising objective. This does not necessarily mean seeking the highest dollar return in every case, but rather to be sure that the conservation objectives can be reached without economic loss or with an improved net return in the long run.

Being able to foresee the effects of land use changes and of recommended conservation practices on the self-interests of the land owner or user enables the conservationist to give sympathetic consultation while encouraging actions in the public interest.

If these criteria are met, the decisions reached will be more soundly based, more apt to be carried out, and more rewarding to all who have invested in the resource development.

Economic information pertinent to resource conservation is needed and used in varying degrees by different people, depending upon their objectives, needs, and available resources. And individuals vary greatly in their knowledge of and ability to use economic information. That is why SCS men must be in a position to help with conservation cost and return considerations to the extent needed by each individual or group.

And that is why it is Service policy to develop and keep current useful cost and return information and estimates in each work unit technical guide.

It is not sufficient, however, simply to have this information in our set of everyday working tools; we must learn to adapt and use it wisely in helping people reach right decisions.

While some investments in conservation improvements may not be rewarding to the individual owner, they are necessary to safeguarding, protecting, and enhancing community or area resources in the public interest. Community and public investments in such instances become necessary to reach group objectives.

There is an ever-increasing need for information on the economic impact on a community, a district, a State, and the Nation of investments in conservation improvements. Such information should be developed to show total investment costs and those annually occurring, the cumulative effect on net returns, and the multiplier effect on the economic health of the community and its institutions.

This is not a job for SCS to do alone. Rather, it is one in which we should encourage and help others who may be better prepared to evaluate the economic effects of conservation.

More people, especially urban leaders, need to understand that both public and private investments in resource conservation have strong public benefits and are essential to national growth and welfare. They frequently need better and more comprehensive facts to help them reach such understanding.

D. A. WILLIAMS

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Conservation Farm Creates Beauty

Story on page 136

Stripcropped tobacco and corn on the slopes and improved pasture of lespedeza, white clover, fescue, and bluegrass in the valley have rewarded James Watkins' efforts to restore a rundown century-old estate in the Boyle County Soil Conservation District, Ky.

His harvest is not only a profitable farm enterprise but a vista of beauty in the place of gully-scarred slopes and eroding streambanks. ♦